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# CHAPTER 1

## INTRODUCTION

### 1.1 MONTANA'S WATER QUALITY AND NONPOINT SOURCES

More than 25 years ago Congress passed the Clean Water Act. The goal of the 1972 law was to make the nation's waters "fishable and swimmable" by 1984. The nation has made considerable progress in improving water quality through the control of point source pollution from industrial and municipal discharges. Today point source pollution in Montana accounts for only 10 percent of water quality impairment of streams and 20 percent of lakes.

Our challenge in the years ahead is to protect and restore water quality through the management of nonpoint sources of pollution. Montana's lakes, rivers and streams are impaired by grazing, farming, mining, construction, logging and many other activities.

In 1987 Congress added Section 319 to the Clean Water Act. Section 319 requires states to 1) assess water bodies for nonpoint source (NPS) impacts, 2) develop nonpoint source management programs, 3) implement those programs, and 4) report biennially on NPS implementation to the U.S. Environmental Protection Agency (EPA).

It has been almost a decade since the Department of Environmental Quality revised its nonpoint source management plan. The 1991 plan described the state's existing programs and authority for addressing nonpoint pollution problems. In the intervening years the legislature amended Montana's Water Quality Act to include the development of Total Maximum Daily Loads (TMDLs); the federal government announced a new Clean Water Action Plan and the Department of Environmental Quality began moving toward a *watershed approach* to address nonpoint pollution priorities.

### 1.2 NINE KEY ELEMENTS OF AN EFFECTIVE STATE NPS PROGRAM

EPA has established evaluation criteria that consist of nine elements that a State Nonpoint Source Program must include in order to demonstrate that it has developed an effective state program. The elements are as follows:

1. Short- and long-term goals that define measurable milestones of the state's nonpoint source program vision.
2. Demonstrate the capability to establish working partnerships with local, tribal, state, and federal entities, and citizen groups to achieve program goals.
3. Maintain a balanced program that employs both a statewide nonpoint source program and on the ground management of individual watersheds, especially where waters are impaired or threatened.

<p><b>VISION STATEMENT:</b> Water quality will be restored and protected through the implementation of voluntary best management practices identified in science based, community supported watershed plans.</p>
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4. Establish priority setting criteria that allow the program to identify known water quality impairments, and prevent water quality degradation from present and future nonpoint source activities.
5. Use a unified and comprehensive assessment program that promotes collaboration with other agencies and programs and coordinates the use of grants and other implementation tools.
6. Develop the capability to use and update a range of approaches (e.g., regulatory and non-regulatory; water quality-based and/or technology-based; technical and financial assistance).
7. Evaluation of federal lands and activities to ensure that they are managed consistently with state nonpoint source program objectives. Where appropriate the state will work with EPA to resolve issues.
8. Program management that efficiently and effectively implements the state's nonpoint source program, including all necessary financial management.
9. Incorporate the principles of adaptive management to review, evaluate, and update the nonpoint source program's environmental and functional measures of success at least every five years.

The proposed watershed approach is a means of fulfilling each of the elements. It is the goal of this document to describe how each of the above categories and elements are addressed in Montana's Nonpoint Source management program.

### 1.3 NPS PLAN OBJECTIVES

**Support Local Conservation Activities:** The NPS Management Plan is based on the premise that water quality solutions must be developed and implemented with the support of citizens who have an acknowledged interest in the watershed. The department plays an important role in supporting local conservation activities. DEQ has structured its NPS program to assist local watershed groups. Planning and monitoring staff are assigned to help specific watershed groups within the state's four major basins (Columbia, Yellowstone, Upper Missouri and Lower Missouri). DEQ's Information and Education program helps publicize local watershed efforts and facilitates communication between watershed groups and other public agencies and private organizations.

**Complete Comprehensive Assessments:** Using watersheds as a management area increases DEQ's ability to collect and utilize information to prepare *comprehensive assessments* of the state's watersheds. Comprehensive assessments explain the complex interactions between land use practices, pollutant loads, watershed processes and water body conditions. DEQ will create standard procedures for pooling information from numerous sources on a watershed basis. Geographic Information Systems, such as an interactive watershed website being developed by the Natural Resources Information System, are one tool that can be used to develop a common data base for management activities planned or underway in a watershed.

**Improve Collaboration with Other Programs, Agencies and Organizations:** A watershed approach strengthens existing intra-agency and interagency coordination and targeting of resources. DEQ's Watershed Management Team (WMT) is an example of a intra-agency collaborative effort. (see page 3-9). The Watershed Coordination Council is the primary interagency coordinating group in Montana (page 3-11). DEQ's watershed planning and monitoring staffs participate in the council's workgroups.

**Improve Connection Between Assessment, Planning and Implementation:** A watershed approach will accelerate the trend within DEQ to link assessment and planning information to implementation grants. The TMDL program requires an explicit numeric connection between sources, impacts and control measures. This can only be achieved with integrated assessment, planning and implementation. DEQ will give priority to grant applicants who show that their planning process is supported by comprehensive environmental

assessments. To better serve the information needs of local watershed groups, DEQ will allocate a portion of its resources to a monitoring program that targets selected watersheds each year.

## 1.4 A WATERSHED APPROACH FOR NPS IMPAIRMENTS

Water quality restoration requires dozens of individual decisions and actions. To restore and protect water quality people not only have to change the way they *do* things, they often have to change the way they *think* about things—about the land, water and the world around them.

Most of the time an individual land owner's actions won't have a measurable impact on water quality (unless it is a large landowner in a small watershed). It is often frustrating for landowners to make extra investments in soil and water conservation measures while their neighbors do little or nothing. For twenty-five years nonpoint source programs had little quantifiable impact on water quality because individual efforts were dispersed across many watersheds.

Montana's watershed approach relies on grassroots groups developing voluntary approaches to restoring water quality. The federal 1998 Clean Water Action Plan also emphasizes local watershed planning and increased collaboration between federal, state, tribal, and local governments, the public; and the private sector.

Managing water resource programs on a watershed basis makes sense – for the community, the state and the environment. The watershed approach enables communities to develop water pollution solutions that incorporate local economic and environmental concerns. Local watershed planning relies on the knowledge, wisdom and experience of ranchers, farmers, foresters, recreationists and public employees who understand the watershed. When local people are involved in developing the plan, they have a vested interest in its success. Bringing citizens together to proactively address issues reduces conflicts. As a critical mass of the community commits to the plan, watershed protection becomes a community value. The watershed approach is especially suited to rural Montana where there is an historic tradition of developing community responses to local problems.

Montana is the fourth largest state in land mass but ranks 44<sup>th</sup> in population. It ranks third in the number of stream miles (176,750 miles), sixth in the number of lakes (10,246) and eighth in total lake acreage (844,802 acres). Due to its small population and tax base Montana has a relatively small state government and limited resources for addressing water quality issues at the state level. A coordinated watershed approach allows DEQ to leverage its resources through cooperation with other government agencies, private groups and volunteers in monitoring, data collection and water quality restoration. Broad-based collaboration and communication also prevent duplication of efforts. Because federal agencies such as the Forest Service, Bureau of Land Management and Natural Resources Conservation Service fund programs on a watershed basis, this approach may increase funding for Montana watershed projects.

## 1.5 SUMMARY OF MAJOR CHANGES TO THE NPS PROGRAM

From 1989 to 1997 DEQ built a comprehensive NPS program that developed Best Management Practices, identified key partners, established agreements for interagency cooperation and funded many successful education, protection and restoration projects. The NPS program was first managed by the Department of Health and Environmental Science (DHES). In 1995 the NPS program was transferred to the newly created Department of Environmental Quality. DEQ staff developed local government contacts and participated in numerous watershed group sponsored projects. This early period of NPS management in Montana fostered a keen understanding of the value of collaboration, consensus and community involvement in water quality management (see Table 1-1).

***The TMDL Amendments to the Montana Water Quality Act:*** The 1997 amendments to the Montana Water Quality Act require DEQ to monitor and assess surface waters and prepare a list of lakes, streams or segments of streams that do not support “beneficial uses.”

Beneficial uses include drinking water supply, recreation, industry, agriculture, wildlife, fish and aquatic life.

The department is instructed to use “all currently available data...from federal, state and local agencies, private entities or individuals” in making its assessments. The law allows DEQ to remove a water body from the list due to a lack of “sufficient credible data” to support its listing. However, DEQ is required to monitor and assess the delisted water body “as soon as possible.”

The 1997 law requires that water quality restoration plans for all threatened and impaired water bodies be completed by 2007.

DEQ prioritizes impaired or threatened water bodies using these criteria:

1. the established beneficial uses (for example, not every lake and stream is expected to support trout)
2. the extent that natural factors over which humans have no control contribute to the impairment;
3. the impacts to human health and aquatic life;
4. the degree of public interest and support;
5. the character of the pollutant and the severity and magnitude of the problem;
6. whether the water body is an important high-quality resource in an early stage of degradation;
7. the size of the water body;
8. immediate programmatic needs, such as waste load allocations for new permits or permit renewals
9. court orders and decisions relating to water quality;
10. state policies and priorities, including the protection and restoration of native fish;
11. the availability of technology and resources to correct the problems;
12. whether actions or voluntary programs that are likely to correct the impairment are currently in place;
13. the recreational, economic, and aesthetic importance of a particular water body.

Threatened or impaired water bodies are classified as high, medium or low priority for developing water quality restoration plans. In setting priorities DEQ relies on a TMDL advisory group. This state-wide committee represents farming, ranching, water-based recreation, the forest industry, environmental organizations, municipalities, mining, federal land agencies, the Department of Natural Resources and Conservation, point source dischargers, conservation districts and recreation interests.

Federal and state laws direct DEQ to develop *Total Maximum Daily Loads* for all impaired water bodies. A TMDL is the total amount of pollution that a waterbody may receive from any source without exceeding water quality standards. A TMDL calculation includes a margin of safety and accounts for seasonal variations and contributions from all point, nonpoint and natural sources.

Water quality restoration plans establish targets to gauge success in meeting water quality standards and restoring beneficial uses. Targets are specific and quantifiable whereas goals are general statements of intent or purpose. For example, the goal of a watershed plan might be “the restoration of a cold water trout fishery.” The plan’s targets, which are directed at achieving the goal, might be 1) reducing sediment by 50 percent; 2) increasing redds (fish spawning nests) by 135 percent; and 3) stabilizing 3412 feet of erosive streambank. When targets are met, water

quality standards should be achieved as indicated by full support of beneficial uses. If uses are not yet supported, the targets need to be changed.

Wherever possible, DEQ intends to work with local watershed groups and conservation districts to develop water quality restoration plans. Watershed groups are comprised of citizens who have an interest in the outcome. DEQ is directed to request the participation of farmers, ranchers, environmentalists and recreationists, as well as representatives of DNRC, the U.S. Forest Service, Bureau of Land Management, municipalities and the forest, mining and tourism industries. Each watershed group, however, reflects local land and water uses in the community. In order to achieve TMDL targets, point source dischargers may have their permits adjusted to reduce their contribution while nonpoint contributors will be urged to adopt a "voluntary program of reasonable land, soil and water conservation practices that result in meeting water quality standards."

The Montana Water Quality Act is oriented toward achieving results. DEQ ensures implementation by:

- (a) incorporating the water quality restoration plan into its continuing planning process,
- (b) incorporating the waste load allocation for point sources into appropriate water discharge permits,
- (c) informing landowners about and assisting in the application of a voluntary program of reasonable land, soil, and water conservation practices to achieve compliance with water quality standards, and
- (d) developing a monitoring program to analyze the effectiveness of the control measures and assess the waters to determine whether compliance with water quality standards has been attained.

If a water quality restoration plan has not restored beneficial uses within five years DEQ is required to conduct a formal evaluation to determine if:

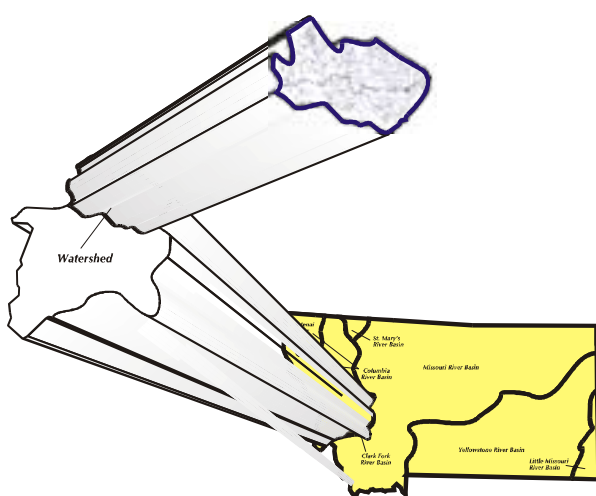
- 1) the implementation of new and improved BMPs is necessary;
- 2) water quality is improving but more time is needed to comply with water quality standards; or
- 3) revisions to the plan will be necessary to meet water quality standards.

**Other NPS Laws and Programs:** Montana laws address an array of NPS and groundwater issues such as stream crossings, septic tanks, strip mines and land fills. Several state and local agencies are delegated authority to address these issues. For example, the Department of Natural Resources and Conservation enforces the Streamside Management Act; the Department of Fish, Wildlife and Parks implements the Stream Protection Act; and conservation districts administer the Natural Streambed and Land Preservation Act.. There is an obvious need to coordinate NPS activities both within the Department of Environmental Quality and between other state agencies.

**The Clean Water Action Plan:** In 1998 DEQ and the Natural Resources Conservation Service brought together federal and state agencies to develop Unified Watershed Assessments. The agencies identified watersheds with common priorities and opportunities for cooperation. The group developed a two year strategy based on a biennial needs assessment where converging agency and local priorities are identified. Local watershed groups provide information on program needs and the state and federal groups coordinate the search for appropriate technical and financial assistance. The participating federal agencies are the Bureau of Reclamation, Bureau of Land Management, Forest Service, National Park Service and Natural Resources

Conservation Service. State agencies include Fish, Wildlife and Parks, Department of Natural Resources and Conservation, Montana Heritage Program and DEQ.

## Figure 1-1 Levels of Watershed Focus



Just as a stream increases in size from the headwaters to the mouth, so the watershed planning process builds from the local watershed level to the sub-basin to the state. With technical and financial assistance from DEQ and other state and federal partners, local watershed groups participate in describing the problem and crafting the solution. Ultimately, the focus of all water quality restoration plans is on implementation by the individual land managers and waters users who impact and benefit from the resource.

**Table 1-1**  
**Montana DEQ Nonpoint Source Program Milestones**

<b>Date</b>	<b>Montana DEQ Nonpoint Source Program Milestones</b>
<b>December 1987</b>	➤ Montana Department of Health and Environmental Sciences (DHES) initial NPS program meeting convened.
<b>January - July 1988</b>	➤ DHES completed draft NPS Management Plan reviewed by interagency NPS Task Force, distributed plan for public review and comment, and sponsored public meetings to receive additional input. Final submitted to Governor for approval.
<b>August 1988</b>	➤ DHES NPS Management Plan submitted to EPA for approval
<b>1989</b>	➤ DHES strategy developed and implemented to coordinate NPS monitoring and assessment activities statewide.
<b>1989 - 1992</b>	➤ DHES stream reach assessments conducted to identify impaired streams.
<b>1989 - 1992</b>	➤ DHES provides financial and technical assistance for demonstration projects on impaired streams including trend monitoring to evaluate project effectiveness
<b>March 1995</b>	➤ The Montana Watershed Coordination Council (MWCC) assumes responsibility for the NPS Task Force. MWCC helps in selection of NPS projects.
<b>July 1995</b>	➤ DHES is reorganized as Department of Environmental Quality (DEQ). DEQ is designated the agency responsible for implementation of NPS program.
<b>May 1996</b>	➤ EPA releases updated guidance to states for nonpoint source programs.
<b>1996</b>	➤ DEQ NPS Management Plan is modified to address nonpoint source pollution from landfills.
<b>August 1996</b>	➤ Watershed Management Team chartered to develop watershed strategy to coordinate DEQ program activities.
<b>July 1997</b>	➤ DEQ integrates Total Maximum Daily Loads initiative into the NPS program.
<b>October 1998</b>	➤ Local, state, and federal agencies develop the first annual Clean Water Action Plan (CWAP) unified watershed assessment for Montana. Priority setting process completed.
<b>June 1999</b>	➤ DEQ uses supplemental 319 money to fund watershed projects as part of CWAP,
<b>May 2001</b>	➤ DEQ solicits public review and comment on <b><i>NPS Management Plan Using a Watershed Approach</i></b> and submits to EPA for approval.
<b>Ongoing Annual Activities</b>	<ul style="list-style-type: none"> <li>➤ Solicit and process applications for 319 grants.</li> <li>➤ Work with MWCC to identify priority NPS projects. Fund 319 projects.</li> <li>➤ Nonpoint source restoration projects completed, groundwater projects , and I&amp;E projects completed.</li> <li>➤ NPS TMDLs plans completed.</li> </ul>